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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,003	09/18/2006	Kazuhiro Hirose	20239/0204681-US0	3079
7278 7590 07/22/2009 DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770				
EXAMINER HOBAN, MATTHEW E				
ART UNIT		PAPER NUMBER		
1793				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/599,003

Applicant(s)

HIROSE ET AL.

Examiner

Matthew E. Hoban

Art Unit

1793

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1.5-7.9 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1.5-7.9 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/7/09 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 5-6, 9, and 12-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz in 6372348 in view of Kato in 6162836.

Regarding Claim 1 and 9: Rutz teaches an iron powder composition useful for making powder magnetic cores. Rutz teaches a starting iron-based core particle, which is iron based or nickel based. Preferred examples of starting powders are the ANCORSTEEL series (See Column 6, Lines 5-70). These powders are then provided with two different insulating layers. The first of these is considered a preinsulating layer and is typically a phosphate complex of iron (iron phosphate salt) (See Column 7, Line 55-Column 8, Line 24). This phosphate salt can be created by the use of phosphoric acid or with other materials such as alkali metal or earth metal phosphates. The iron powder with this preinsulating layer is then dried.

After this step, an annealable insulating material is coated upon the iron phosphate salt layer. This insulating material is in the form of oxide particles dispersed

in a resin in a ratio of from .3:1 to 1:1 (polymer: oxide). This layer is continuous and non porous and decomposes at temperatures of 250 C or greater (See Column 4, Lines 17-70). Typical oxides used in this annealable material are silica, alumina, boria, sodium carbonate, etc (See Column 5, Lines 25-30). Comparable to the weight of the iron particles, this layer can be present from .001 to 15 wt%; meaning that the amount of the resin is from .00023 to 7.5 wt% of the composition (See Column 5, Lines 50-55).

Furthermore, when these composite particles are to be used for compression molding or similar compaction techniques, Rutz teaches that it is advantageous to mix a lubricant in an amount up to 1 wt% with the composite particle. One exemplary lubricant composition is zinc stearate, which is a metallic soap. Therefore, in terms of the amount of lubricant used in his composition, Rutz teaches an overlapping amount with the instant claims. One of ordinary skill in the art need only select from this portion of the overlapping ranges to arrive at the invention as claimed. Overlapping ranges have been held to present a prima facie case of obviousness over the prior art. See MPEP 2144.04.

Rutz is silent as to the particle size of zinc stearate used in his invention.

However, Kato teaches zinc stearate having average particle sizes between 1 and 2 (See Examples 1-5). These zinc stearates would be suitable in the invention of Rutz based on the fact that they are a lubricating composition as noted by Kato at line 54-60 of Column 3. One of ordinary skill in the art would find it obvious to use the zinc

stearate of Kato in the composition of Rutz based on the fact that Rutz explicitly notes advantages obtained by adding zinc stearate; however, Rutz is silent as to specific types and properties desirable in this zinc stearate. One would thus be motivated to add the zinc stearate composition of Kato in order to gain all the benefits noted by Rutz including, reduced stripping and sliding pressures.

Regarding Claim 5 and 12: Comparable to the weight of the iron particles, the oxide/thermoplastic can be present from .001 to 15 wt%; meaning that the amount of the resin is from .00023 to 7.5 wt% of the composition (See Column 5, Lines 50-55). Suitable resins are noted on the top of Column 5, wherein alkyd, acrylic, and epoxy resins are noted. All of these resins are thermoplastic. Since they encapsulate the particles and the particles are disposed together prior to compaction and sintering, this thermoplastic is interposed between the particles.

Regarding Claims 6 and 13: Rutz in view of Kato teaches a method of making a powder magnetic core using the aforementioned materials by using compression molding at an elevated temperature and a pressure ranging from 20-70 tsi.

5. Claims 7 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz in 6372348 in view of Kato in 6162836 as applied to claims 6 and 13 above, and further in view of Rutz in 5306524 (Rutz2).

6.

Please review the previous 103 rejection to discern the teachings of Rutz in view of Kato.

Rutz in view of Kato are silent as to the expected fill rate of the final magnetic core. Only the density of the comparative examples are given and no indication of how these numbers compare to theoretical density are shown.

However, Rutz2 shows the density of cores made of the same materials as those of Rutz in view of Kato, that being Ancorsteel 1000C. Rutz2 shows that the density of Ancorsteel compacts at 50 torr and 0% BN is approximately 7.391 g/cc where this represents 96.4% fill ratio. The comparative examples of Rutz shown in Table 1 state that the dual coated iron particles of the same material reach 7.26 g/cc. This figure in terms of the data given by Rutz2 would convert to approximately ~95% fill rate. It is noted that the comparative examples of Rutz are cold molded. Rutz had previously stated that by performing compression at elevated temperatures, the compacted density of the core components is increased resulting in overall increased performance. Therefore, the final density of hot pressed magnetic cores of Rutz in view of Kato would necessarily be above 95% fill rate based upon the fact that the comparative cold pressed products reach 95% and improvements in density are expected when the core is compressed under an elevated temperature.

Response to Arguments

7. Applicant's arguments with respect to claim 1 and 9 have been considered but are moot in view of the new ground(s) of rejection. The new art takes into account the most recent amendments to the claim which omit BN as the sole lubricant. The previous reject was based on the presence of BN and thus the previously cited art is withdrawn and a totally new rejection is put in place. This rejection has not been responded to, but it should be noted that any response indicating non-obviousness in view of the overlapping range of the prior art should include evidence and/or a declaration commensurate with the claimed subject matter. Attorney arguments are not sufficient to prove unexpected results over the prior art. See MPEP 716.01C.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Hoban whose telephone number is (571) 270-3585. The examiner can normally be reached on Monday - Friday from 7:30 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/
Supervisory Patent Examiner, Art Unit 1793

/Matthew E Hoban/
Examiner, Art Unit 1793